

JUN 05 2006

Attorney's Docket No.: MP0237 / 13361-049001

**OFFICIAL COMMUNICATION FACSIMILE:****OFFICIAL FAX NO: (571) 273-8300**

Number of pages including this page 9

Applicant : Schat Sutardja  
Serial No. : 10/621,058  
Filed : July 15, 2003

Art Unit : 2838  
Examiner : Jeffrey L. Sterrett  
Notice of Allowance Mailed: May 19, 2006

Title : Low Loss DC/DC Converter

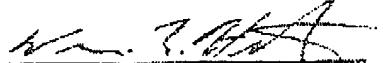
**MAIL STOP ISSUE FEE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attached to this facsimile communication cover sheet is a Miscellaneous Correspondence with enclosure, faxed this 5<sup>th</sup> day of June, 2006, to the United States Patent and Trademark Office.

Respectfully submitted,

Date: June 5, 2006

  
William E. Hunter  
Reg. No. 47,671

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FISH AND RICHARDSON

Attorney's Docket No.: MP0237 / 13361-049001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Sehat Sutardja                          Art Unit : 2838  
Serial No. : 10/621,058                          Examiner : Jeffrey L. Sterrett  
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MISCELLANEOUS CORRESPONDENCE

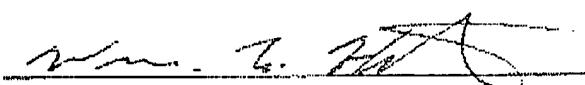
Applicant calls attention to the attached 7 page Notification and Translation of First Office Action issued March 31, 2006, for co-pending Chinese Patent Application No. 200310101782.X, filed October 23, 2003, and published on September 22, 2004, Publication No. CN1531177A. The First Office Action was translated into English by Jeekai & Partners.

Applicant respectfully submits a copy of the above reference, and requests that the reference be placed in the file pursuant to 37 CFR §1.97(i).

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: June 5, 2006

  
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Reg. No. 47,671

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CERTIFICATE OF TRANSMISSION BY FACSIMILE

I hereby certify that this correspondence is being transmitted by facsimile to the Patent and Trademark Office on the date indicated below

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Date of Transmission                          June 5, 2006

\_\_\_\_\_  
Signature

Rita H. Jennings  
Typed or Printed Name of Person Signing Certificate

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CENTRAL FAX CENTER

JUN 05 2006

(Translated by JeeKai & Partners)

## STATE INTELLECTUAL PROPERTY OFFICE OF PRC

Jeekai & Partners Suite 602, Jinyu Tower A129 West Xuan Wu Men Street Beijing 100031	Date of Issue:
Appln. No.: 200310101782.X	Bar Code
Applicant: Marvell World Trade Ltd.	
Title: Low Loss DC/DC Converter	

### NOTIFICATION OF FIRST OFFICE ACTION

1.  Applicant requested the substantive examination. In accordance with paragraph 1 of Article 35 of the Patent Law, the examiner examined the above-identified patent application for invention.  
 In accordance with Article 35(2) of the Chinese Patent Law, the Patent Office has decided, on its own initiative, to proceed with the substantive examination of the above-identified patent application for invention.
2.  Applicant claims
 

US Application	filling date of October 25, 2002	as the priority date.
US Application	filling date of July 15, 2003	as the priority date.
	filling date of	as the priority date.
	filling date of	as the priority date.
	filling date of	as the priority date.

 The applicant has submitted copy of Certified Priority Document for the earliest priority.  
 The applicant has not submitted a copy of Certified Priority Document for the earliest priority yet, the priority is deemed unclaimed according to the Article 30 of the Patent Law.
3.  After examination:  
 The \_\_\_\_\_ submitted on month/date/year does not meet the requirement of Rule 51 of the Implementing regulations of the Patent Law  
 The \_\_\_\_\_ submitted on month/date/year does not meet the requirement of Article 33 of the Patent Law  
 The \_\_\_\_\_ submitted on month/date/year
4. The application documents on which the examination is conducted, are:  
 The original application documents;  The examination is conducted on the following application documents:  
 Claims \_\_\_, pages \_\_\_ and Figures \_\_\_ of the Original Application filed on the date of the Divisional Application  
 Claims \_\_\_, pages \_\_\_, and Figures \_\_\_ filed on month/date/year  
 Claims \_\_\_, pages \_\_\_, and Figures \_\_\_ filed on month/date/year  
 Claims \_\_\_, pages \_\_\_, and Figures \_\_\_ filed on month/date/year  
 The Abstract filed on \_\_\_, and the Drawing for Abstract filed on September \_\_\_
5.  The Notification is made without reference.  
 The Notification is made with reference.  
 The following references are cited in this Notification (the codes of the references will be used in the further examination procedures):
 

Code	Reference No. or Title	Publication Date (or Filing Date of Conflict Application)
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6. Examiner's opinions:  
 Regarding the Description:  
 the content of the application is not patentable under Article 5 of the Patent Law.  
 the Description does not meet the requirement of Article 26(3) of the Patent Law.

- the Description does not meet the requirement of Article 33 of the Patent Law.
- the wording of the Description does not meet the requirement of Rule 18 of the Implementing Regulations of the Patent Law.
- Regarding the Claims:
  - claim(s) \_\_\_\_\_ do not possess the novelty under Article 22(2) of the Patent Law.
  - claim(s) \_\_\_\_\_ do not possess the inventiveness under Article 22(3) of the Patent Law.
  - claim(s) \_\_\_\_\_ do not possess the practical applicability under Article 22(4) of the Patent Law.
  - claim(s) \_\_\_\_\_ fall within non-patentable subject matters under Article 25 of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Article 26(4) of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Article 31(1) of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Article 33 of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the definition for invention of Rule 2(1) of the Implementing Regulations of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Rule 13(1) of the Implementing Regulations of the Patent Law.
  - claim(s) 1, 5-7, 11, 13, 16-22, 27-28, 30-36 do not meet the requirement of Rule 20 of the Implementing Regulations of the Patent Law.
  - claim(s) 1 do not meet the requirement of Rule 21 of the Implementing Regulations of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Rule 22 of the Implementing Regulations of the Patent Law.
  - claim(s) \_\_\_\_\_ do not meet the requirement of Rule 23 of the Implementing Regulations of the Patent Law.

Please refer to the text of the Notification for detailed comments of the above opinions.

7. Based on the above opinions, the examiner considers that:
  - The applicant should amend the application documents according to the requirements in the text of the Notification.
  - The applicant should state the reasons why the application should be granted for a patent in Response to this Action, and amend the application documents to meet the requirements as pointed out in the text of the Notification. Otherwise, the application may not be granted.
  - The application does not contain any substantive content that may be granted for a patent. If the applicant does not state any reason or if his reason is not persuasive, the application will be rejected.
8. Applicant should pay attention to the following items:
  - (1) According to Article 37 of the Patent Law, the applicant should submit a response within 4 month(s) from the date of receiving this Notification. If the applicant does not respond, without any justified reason, the application will be deemed withdrawn.
  - (2) The amendments to the application documents should meet the requirement of Article 33 of the Patent Law. The amendment text should be submitted in duplicate and its format shall comply with the relevant provisions of the Examination Guide.
  - (3) The Response and/or Amendment documents should be mailed or submitted directly to the Receiving Section of the Patent Office. Otherwise, the submitted documents have no legal effect.
  - (4) The applicant and/or attorney may not meet with the examiner if an appointment is not made in advance.
9. The Text of this Notification contains 5 pages, and has the following annexes:
  - page(s) of        copies of the cited reference.

RECEIVED  
CENTRAL FAX CENTERChinese Patent Application No. 200310101782.X  
Translated by Jeekai & PartnersJUN 05 2006**English Translation of Text of the First Office Action**

The present application relates to a DC/DC converter and a method of direct current to direct current power conversion. However, the invention title of the present application reflects only the converter, failing to reflect the method. Thereby the invention title of the present application fails to completely reflect the types of the invention contained in this application, not meeting the requirement of Rule 18(1) of the Implementing Regulations of the Chinese Patent Law.

1. The technical problem to be solved by this invention is reducing the gate switching loss of the switch devices. The technical solution adopted by the application to solve the above technical problem is of employing a DC/DC converter which comprises: a first switch, the first switch to output a first voltage on a first output terminal in response a turn-on voltage at a first control terminal, wherein the first control terminal selectively communicates with one of  $N>2$  different voltages; and a second switch, the second switch to output a second voltage on a second output terminal in communication with the second terminal in response to a turn-on voltage at a second control terminal, wherein the second control terminal selectively communicates with one of  $M>1$  different voltages. Moreover, when the switches are turned on, the voltages applied to the gates of the switches by the control terminals, which are related to the switches, are switched sequentially from an "off" voltage at which the switch is off to an intermediate voltage, and then finally to an "on" voltage at which the switch is on. The intermediate voltage is at a level between that of the first and second voltages, and there is at least one intermediate voltage, so as to accomplish the purpose of reducing the gate switching loss of the switch devices. Thereby, part of the essential technical features for solving the technical problem of the invention are: while the switches are turned on, the voltages applied to the gates of the switches by the control terminals, which related to their respective switches, are switched sequentially from an "off" voltage at which the switch is off to an intermediate voltage, and then finally to an "on" voltage at which the switch is on; wherein the intermediate voltage is at a level between that of the first and second voltages, and there are at least one intermediate voltages. Nevertheless, claim 1 does record the technical features reflecting the content mentioned above. Thereby claim 1 lacks the essential technical features for solving the technical problem above, so it does not wholly reflect the technical solution of the invention. Therefore, claim 1 does not meet the requirement of Rule 21(2) of the Implementing Regulations of the Chinese Patent Law.

Moreover, even if the applicant amend claim 1 to remove the defect above, claim 1 still has some defects not meeting the requirement of Rule 20(1) of the

Implementing Regulations of the Chinese Patent Law.

The parameters of "M" and "N" in claim 1 are not stated clearly, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. Both parameters "M" and "N" should be clearly defined as integers.

2. The "switch assembly controller responsive to the voltage detector" and "the first control terminal ... in accordance with the switch assembly controller" are not stated clearly. It cannot be learned from such expression that the switch assembly controller are responsive to what of the voltage detector and further in communication with the first terminal. And it cannot be learned from thus expression that the first control terminal selectively communicates with the one of the  $N > 2$  different voltages in accordance with what of the switch assembly controller. Thereby the scope sought to be protected by claim 5 is not clear. Therefore, claim 5 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. Amendments such as "responsive to a detection signal of the voltage detector," and "in accordance with the output signal of the switch assembly controller," are suggested.

3. The parameter "n" in claim 6 is not stated clearly, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The parameter "n" should be clearly defined as an integer.

4. The parameter "m" in claim 7 is not stated clearly, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The parameter "m" should be clearly defined as an integer.

5. The parameter "Cgs" in claim 11 is not stated clearly. Since the meaning and number of the parameter "Cgs" are not clearly explained or defined in claim 11, and "Cgs" is not a technical term which is specified by the State in a unified way, the scope sought to be protected by claim 11 is not clear. Therefore, claim 11 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

6. The parameter "P" in claim 13 is not stated clearly. Since the meaning and number of the parameter "P" are not clearly explained or defined in claim 13, and "P" is not a technical term which is specified by the State in a unified way, the scope sought to be protected by claim 13 is not clear. Therefore, claim 13 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. It is suggested to add the technical feature of claim 14 or 15 into claim 13, and clearly define P as an integer.

7. "V1," "V2," and "V3" stated in claim 16 are redundant parameters, and they

are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change "V1" into a word expression such as "first voltage," and delete this expression of "V1" from this claim, and change the rest terms in a similar way.

8. "V1," "V4," and "V3" stated in claim 17 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change "V1" into a word expression such as "first voltage," and delete this expression of "V1" from this claim and change the rest terms in a similar way.

9. "V1," "V2," and "V3" stated in claim 18 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change "V1" into a word expression such as "first voltage," and delete this expression of "V1" from this claim, and change the rest terms in a similar way.

Moreover, there is a typo in claim 18, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

10. "V1," "V4," and "V3" stated in claim 19 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change "V1" into a word expression such as "first voltage," and delete this expression of "V1" from this claim, and change the rest terms in a similar way.

11. Claim 20 states "... to substantially equilibrate with Vn," wherein the "substantially" causing the scope sought to be protected by claim 20 unclear. Therefore, claim 20 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. It is suggested to delete the expression of "substantially."

12. The parameters of "l," "i," "n," "N(i)," and "n(i)," in claim 21 are not stated clearly. Since the meaning and number of the parameters of "l," "i," "n," "N(i)," and "n(i)," are not clearly explained or defined in claim 21, and "l," "i," "n," "N(i)," and "n(i)" are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 21 is not clear. Therefore, claim 21 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

13. The parameters of "J," "n(j)," "n," "N(j)," and "j," in claim 22 are not stated

clearly. Since the meaning and number of the parameters of "J," "n(j)," "n," "N(j)," and "j," are not clearly explained or defined in claim 22, and "J," "n(j)," "n," "N(j)," and "j," are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 22 is not clear. Therefore, claim 22 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

14. The parameters of "J," "l," "i," "n," "N," "N(i)," and "n(i)," in claim 27 are not stated clearly. Since the meaning and number of the parameters of "J," "l," "i," "n," "N," "N(i)," and "n(i)," are not clearly explained or defined in claim 22, and "J," "l," "i," "n," "N," "N(i)," and "n(i)," are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 27 is not clear. Therefore, claim 27 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

15. The parameters of "J," "m," "M," "m(j)," and "M(j)," in claim 28 are not stated clearly. Since the meaning and number of the parameters of "J," "m," "M," "m(j)," and "M(j)," are not clearly explained or defined in claim 28, and "J," "m," "M," "m(j)," and "M(j)," are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 28 is not clear. Therefore, claim 28 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

16. "V2" and "V3" stated in claim 30 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change them into word expressions, and delete the parameters mentioned above.

17. "V2" and "V3" stated in claim 31 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change them into word expressions, and delete the parameters mentioned above.

18. "V2" and "V3" stated in claim 32 are redundant parameters, and they are not technical terms specified by the State in a unified way, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. The applicant is suggested to change them into word expressions, and delete the parameters mentioned above.

19. The parameters of "j," "m," "M," "m(j)," and "M(j)," in claim 33 are not stated clearly. Since the meaning and number of the parameters of "J," "m," "M," "m(j)," and "M(j)," are not clearly explained or defined in claim 33, and "J," "m,"

"M," "m(j)," and "M(j)," are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 33 is not clear. Therefore, claim 33 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

20. The parameters of "J," "m," "M," "m(j)," and "M(j)," in claim 34 are not stated clearly. Since the meaning and number of the parameters of "J," "m," "M," "m(j)," and "M(j)," are not clearly explained or defined in claim 34, and "J," "m," "M," "m(j)," and "M(j)," are not technical terms which are specified by the State in a unified way, the scope sought to be protected by claim 28 is not clear. Therefore, claim 34 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

21. "V2(j)" in claim 35 is not stated clearly. Since the parameter "V2(j)" is not clearly explained or defined in claim 35, and "V2(j)" is not a technical term which is specified by the State in a unified way, leading the meaning of "V2(j)" unclear, the scope sought to be protected by claim 35 is not clear. Therefore, claim 35 does not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law.

22. Claim 36 states "j=1 to j=J ..." wherein "j" is not clearly defined, not meeting the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law. It is suggested to further define "j=1 to j=J, wherein J is an integer."

Conclusively, claim 1 of the present application does not meet the requirement of Rule 21(1) and Rule 20(1) of the Implementing Regulations of the Chinese Patent Law, claims 5-7, 11, 13, 16-22, 27-28, 30-36 do not meet the requirement of Rule 20(1) of the Implementing Regulations of the Chinese Patent Law, and the Description does not meet the requirement of Rule 18(1) of the Implementing Regulations of the Chinese Patent Law. Accordingly, the application should state reasons for why this patent application can be granted a patent, and the applicant should make amendment to remove the defects pointed by the Notification, within the time limit of four months specified by this Notification. Otherwise, the present application cannot be granted a patent. The portion of "Summary of the Invention" in the Description should be adaptively modified when amending the Claims. At the same time, the amendment should meet the requirement of Article 33 of the Chinese Patent Law, without going beyond the recorded scope of the original specification and claims.